

Rec'd PCT/PTO 07 JUL 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

10/500988

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 July 2003 (17.07.2003)

PCT

(10) International Publication Number
WO 03/056919 A2

(51) International Patent Classification⁷: A01N 1/02, F25D 13/04, 13/06

(21) International Application Number: PCT/IL03/00026

(22) International Filing Date: 8 January 2003 (08.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/345,643 8 January 2002 (08.01.2002) US
60/391,575 27 June 2002 (27.06.2002) US

(71) Applicant (for all designated States except US): I.M.T. INTERFACE MULTIGRAD TECHNOLOGY LTD [IL/IL]; Hamazmera Street 3, P.O.B. 2044, 70400 Ness Ziona (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): ARAV, Amir [IL/IL]; Queen Shlomzion Street 54, 62266 Tel Aviv (IL).

(74) Agent: REINHOLD COHN AND PARTNERS; P.O. Box 4060, 61040 Tel-Aviv (IL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

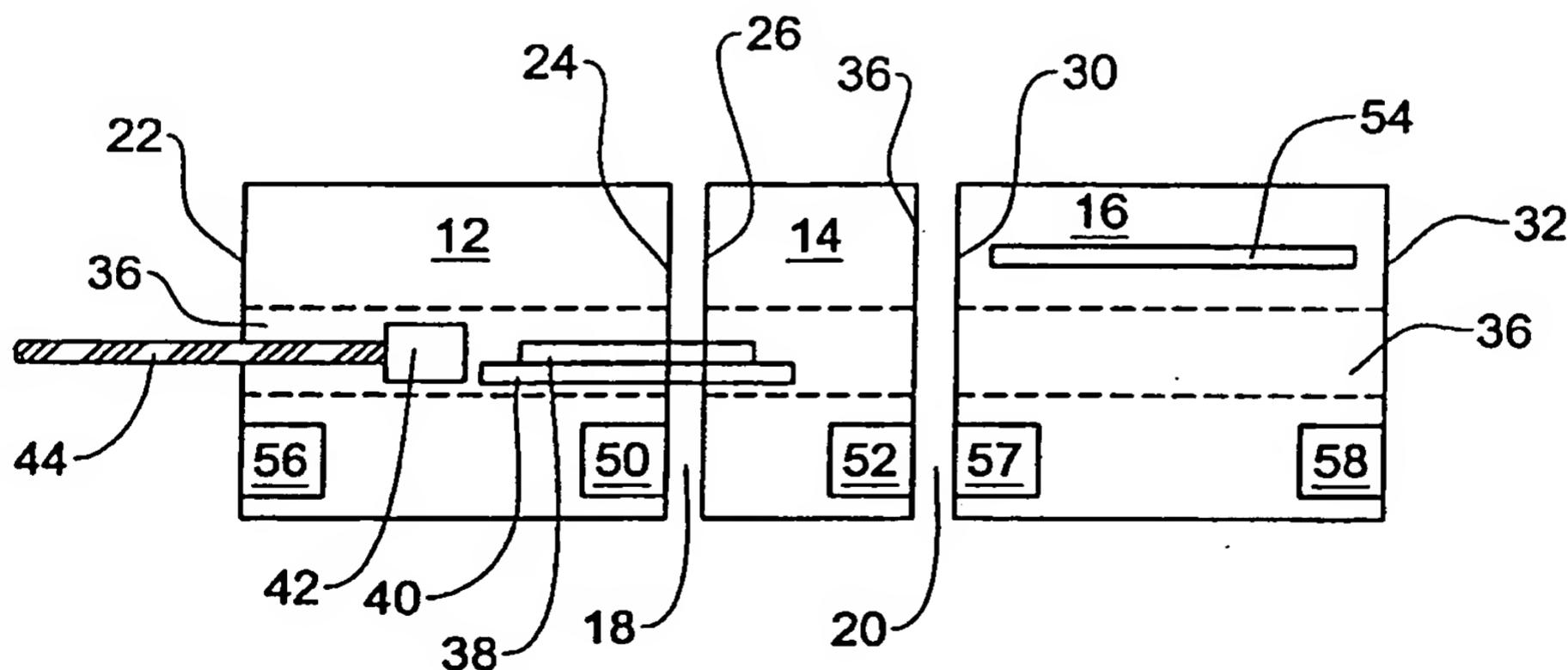
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND DEVICE FOR FREEZING AND THAWING BIOLOGICAL SAMPLES



WO 03/056919 A2

(57) Abstract: Disclosed is a method for changing the temperature of a sample from an initial temperature via an intermediate temperature to a final temperature, one of the initial and final temperatures being above the freezing point of said sample and the other being below the freezing point. The method is for changing the temperature of a sample having minimal dimension in each of two mutually perpendicular cross-sections exceeding 0.5 centimeters, and at least one of the cross-sections having an outer zone and an inner zone.